

Response  
Application No. 10/581,268  
Attorney Docket No. 042530A

### **REMARKS**

Claims 27-32 and 34-44 are currently pending. Claims 1-26 and 33 have been cancelled.

### **Interview Summary**

Applicants thank the Examiner for the telephone interview on November 30, 2011 (hereinafter referred to as “Examiner interview”). The allowed claims of related US patent application No. 12/761,223 as well as the currently cited prior art were reviewed during the interview. Arguments were presented regarding the patentability of the present claims in view of the prior art. The following response reiterates the points discussed during the interview.

In the Examiner interview, the phrase a “single global position system (GPS)” in claim 27 was reviewed. Applicants submit it would be clear to a person of skill in the art that the phrase “single global position system (GPS)” means a GPS system with a single antenna and single receiver when interpreted in light of the specification as a whole. For example in paragraph [0069] there is disclosure that the delivery system of the present invention has “a GPS (global position system) receiver with antenna”. Applicant notes that this language was found allowable in co-pending application No. 12/761,223.

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**Claim Rejections under 35 U.S.C. §103**

**Claims 27 and 34-44 are rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Kumar (US 5,477,941), in view of Clyne K.M. (WO 0118558 A1) and Gray (US 2002/0072833 A1).**

The liquid composition application system (and method) recited in the present claims processes real-time GPS data from a single GPS to determine kinematic and/or location parameters (i.e. topological information) and controls the application of a liquid composition based upon the value of these parameters. One exemplary advantage of this approach is that prior knowledge of the track (e.g. based on a track database) is not required to effectively administer the liquid composition as the train passes along the track (as discussed in paragraph [0029] of the application). Furthermore, in the present invention, the processing device (which processes the topological information and controls application of the liquid composition) is remote at a site separate to the train consist. It is submitted that none of the cited prior art teach or suggest a liquid composition application system providing this combination of features.

Kumar teaches a system for applying a lubricant to a track, however, as acknowledged by the Examiner, Kumar fails to teach the use of a GPS receiver for acquiring topological information or the control of the application of the lubricant based upon real-time GPS data. Furthermore, the microprocessor disclosed in Kumar is not remote from the train consist.

In one embodiment disclosed by Clyne a single GPS receiver and antenna is used to provide a position signal. A track database is consulted to infer a location from the position signal and a track curvature C is determined at that location (page 6, lines 25-29 of Clyne ).

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Another aspect of the invention disclosed in Clyne is reduction of track wear by detecting curves and dispensing a lubricant to rails of a track (see page 7, lines 1 to 8). In this aspect of the invention disclosed in Clyne, a pair of GPS receivers send signals to a microprocessor to determine an angular change signal and thus the curvature of the rail track (page 7, lines 18-24). Therefore, the disclosure in Clyne where a lubricant is applied to a rail track utilizes two GPS receivers.

In the Examiner's Response to Arguments on pages 14-15 of the Office Action, the Examiner states that the disclosure in Clyne of "a single GPS receiver and antenna, for example GPS receiver 16 and antenna 12, provides a position signal 54 (in addition to any other signals provided for other purpose)" teaches topological information of a rail system acquired from a single GPS in real-time. Applicants respectfully disagree.

Claim 27 specifies that a single GPS is used to acquire in real time topological information comprising speed, heading, altitude, change in speed, change in direction, change in elevation or orientation of a rail car in the rail system, or a combination thereof and this topological information is processed and used to control application of liquid composition in the rail system. In Clyne a single GPS is used to provide a position signal and using a location inferred from the position signal, a track database is consulted to determine the track curvature at that location (see page 6, lines 25-29 of Clyne). The method disclosed in Clyne requires prior knowledge of the track and the use of a track database to identify the location of the train. As discussed in the Examiner interview, the position signal disclosed in Clyne using a single GPS is

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not real time topological information comprising speed, heading, altitude, change in speed, change in direction, change in elevation or orientation of a rail car in the rail system. Further, there is no teaching in Clyne of using a single GPS to acquire in real time the topological information defined in claim 27. Clyne therefore fails to disclose controlling the application of a liquid composition based upon topological information of a rail system acquired from a single GPS in real-time as recited in the present claims. Furthermore, the microprocessor disclosed in Clyne is not remote from the train consist.

Gray teaches a distribution power system wherein data obtained from a GPS receiver is utilized to lookup the properties of the track against a predetermined track database, and based upon the properties of the track contained in the track database the system distributes power amongst the locomotives of a train (see Gray; page 2, paragraphs 21, 22 and 24). Thus, in contrast to the system (and method) recited in the present claims, Gray requires prior knowledge of the track (i.e. using a track database) to take control actions. Further, Gray does not teach or suggest the application of a liquid composition to the track; rather, Gray is directed at regulating power distribution amongst locomotives in a train. Accordingly, Gray clearly fails to disclose the control of the application of a liquid composition based upon topological information of a rail system acquired from a single GPS in real-time as recited in the present claims. Further, Gray teaches away from such an approach by requiring that the control actions are based upon the properties of the track obtained from a predetermined track database.

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Therefore, it is submitted that the combination of Kumar, Clyne K.M., and Gray would not result in the system and methods recited in the claims 27 and 34-44 as none of the cited art teach or suggest the use of a single GPS to acquire in real time topological information to control of application of a liquid composition as recited in the present claims. Nor do the combined cited art teach or suggest the use of processing the data obtained from a single GPS off-site from the train consist as defined in claims 27 and 34-44. Reconsideration and withdrawal of the rejection of claims 27 and 34-44 under 35 U.S.C. 103(a) is respectfully requested.

**Claims 28-32 are rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Kumar, in view of Clyne K.M., Gray, and Kast (US 6,578,669 B2).**

Claims 28-32 are directly or indirectly dependent on claim 27. As discussed above, claim 27 is not obvious in view of Kumar, Clyne K.M., and Gray. Kast teaches a lubrication system mounted on a railroad locomotive for applying a lubricant to a rail. There is no teaching in Kast of a GPS system for acquiring topological information of a rail system in real time, nor controlling the application of lubricant based on such information. Accordingly, Kast clearly fails to disclose the control of the application of a liquid composition based upon topological information of a rail system acquired from a single GPS in real-time as recited in the present claims. Therefore, it is submitted that the combination of Kumar, Clyne, Gray and Kast would not result in the system and methods recited in claims 28-32. Accordingly, Reconsideration and withdrawal of the rejection of claims 28-32 under 35 U.S.C. 103(a) is respectfully requested.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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### **CONCLUSION**

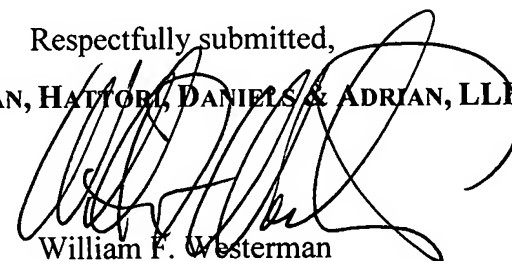
In view of the foregoing remarks, it is submitted that all pending claims are in condition for allowance. A prompt and favorable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,  
**WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP**

A large, stylized handwritten signature in black ink, likely belonging to William F. Westerman, is written over the firm name.

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